THE
VETERINARY JOURNAL

MAY, 1915.

Editorial.

THE ARMY VETERINARY SERVICE.

THE *Daily News* for March 22 contains the following interesting and welcome announcement: —

The Under-Secretary of State for War, answering a letter addressed to him by Sir Clement Kinloch-Cooke, M.P., on the position of junior officers in the Royal Army Medical Corps, wrote: "I am glad to be able to inform you that it has now been arranged that all the lieutenants in the Royal Army Medical Corps should be promoted captains." We congratulate the doctors on having attained some measure of success in their efforts to secure better rank and more pay in the Service, but we question even yet whether the favour granted is as pliable as it ought to be. At any rate, we can conceive of not a few men joining the Royal Army Medical Corps at a marked disadvantage. It was quite an anomaly that professional men doing expert work for their country should only have been granted such a minimum rank on joining the Army as that of lieutenant. In all walks of life experience and technical ability, if worth anything, produce their reward. The bank clerk becomes in time a bank manager or the head of a department, the midshipman becomes a mate or captain, the curate reaches a vicar's, rector's, or dean's position, the devotees of the sock and buskin attain the star actor's or actress's pedestal or the principal parts in the dramatic fare, and even in ordinary industrial circles the carter may become a head horseman, the groom a coachman, the piecer a minder, and the navvy a foreman. Any such men or their like, if requested to go back to their original positions and pay, would resent the

demand and be justifiably dissatisfied with their recompense and status. The majority of them would have gained their places by merit, industry, and perseverance, and, naturally, little goodwill or regard would exist towards those who had again placed them in inferior positions. They would always be men with a legitimate grievance, and no class of individuals of this description ought to exist long in a well-governed State.

The treatment of horses wounded on the battlefield, the care of equines in camp and on the march and their maintenance in health, is no less essential to the effectiveness of military operations than the care and treatment of soldiers fighting in their country's cause. If justice is to be done, the best results obtained, and the least present and future suffering avoided, all of which are necessary in really well-managed operations, then those veterinary surgeons who have left good positions in civil life to take up arduous and important duties in military spheres should have adequate recompense, and as near as possible equal social rank and position to that which they formerly enjoyed. The individual himself should not be penalized because he has willingly and courageously answered his country's call; the wife and children at home should not suffer because the head of the house has done his duty, or perhaps more than his duty.

No deserving country ought to permit such a lapse, and no paternal Government that desires to do right—and in many things this Government has so desired—will rest satisfied with the display of such a marked handicap on loyalty. Much cant has been talked by those living on warm hearthstones about patriotism, and with many it seems to be taken for granted that an unwritten law demands that those employed in the relief of their country's human or animal suffering should never consider such material things as pay and position. To this misapprehension of human ethics and right-mindedness we would reply that no body of men is ever likely to do justice to its calling and entourage unless it is adequately and proportionately rewarded.

A Member of Parliament is now considered to be worth £400 a year, and he receives it; and we consider that the lowest paid veterinary surgeon engaged at the present time wholly in his country's service ought to be worth quite this amount, and that there should be no bones made about paying it to him and

letting him have it *as a net amount* without any deductions or uncertain additions. Men of experience in their profession who have left lucrative practices, and who are mature or middle-aged, should not be obliged to join the Army as lieutenants, but given rank and pay commensurate with their years of technical service in civil life and their sacrifices. Their duties are vital, directly and indirectly, to the welfare of the campaign, and if "broke in the wars" a grateful country should make their days of darkness as pleasant as possible, and certainly they should not end them in poverty, obscurity, and oblivion.

The only way to remedy the defects now existing in our case is to keep pegging away at those in authority, and the medical profession has shown us how they have achieved their step forward. G. M.

CERTIFIED CLINICAL WORK

In any branch of science a combination of theory with practice is necessary to produce a finished result. The application of theoretical knowledge to the puzzles which disease presents is requisite for their solution. One prominent aim of a good veterinary surgeon should be to become as perfect as possible in the application of acknowledged truths and laws. Applied science joined to the requisite proficiency in the art of his practice will enable him to take his proper position in the ranks of a profession which ought to be both learned and skilled. We lay some stress on the quality of learning because there is a tendency to omit a consideration of it by the lay public in summing up our calling, and a doubtful sort of recognition of it also among the members of other learned professions, whilst even in our own ranks we question whether this desirable attribute is always given the prominence it deserves and ought to have. Without a modicum of skill we shall, of course, not travel far in our chosen vocation, but mere deftness often assumes an inflated value when not backed up by adequate reasons for its exercise, and occasionally its display is of too stagey or theatrical a nature altogether, the object being to create an impression rather than to achieve a result.

It will have been generally noted that the question of what has hitherto been known as "compulsory pupilage" has once

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more come to the fore. There has always been a tendency to retain old names in our profession, and in this case the rose of "compulsory pupilage" would assume a much more pleasant aspect if another title was substituted for it. Anything "compulsory" is resented by the average Briton, and the need for compulsion should have passed by the time a man is associated with a veterinary college, while "pupilage" suggests boys' and girls' schools, or academies for demure young ladies and budding young gentlemen. "Obligatory tuition" sounds and reads better than "compulsory pupilage." The embryo collegian will have passed the pupil's term and be gifted with qualities of mind and body beyond the pupil stage. If he is to be a fit recipient for veterinary knowledge he will be an intelligent, well-educated youth, possessing a good groundwork of general information. We suggest that under these circumstances a too personal designation given to him, suggesting that he is an irresponsible biped, such as that indicated by the name of "a compulsory pupil" is both unnecessary and undesirable.

Of all satisfactory terms to notify what is in the minds of many of us perhaps "certified clinical work" is the best. We think each candidate for the diploma of the Royal College of Veterinary Surgeons should possess a certificate that he has done a certain amount of clinical work. The minimum of this amount can be formulated and tabulated by our governing authorities, and its maximum, together with the thoroughness of either, be taken into consideration by our examining board and tested by them when awarding marks or honours. No man will make a worse practitioner for gaining experience in clinical work, and many graduates will be benefited thereby.

We refrain from indicating when a man shall obtain experience of this kind, because we know how individuals differ in temperament, proclivities, and receptivity, but we think the period may very well be left to the developing clinician himself, who is supposed to be acquainted with the two adages: "Man, know thyself," and "Worth makes the man, the want of it the fellow; the rest is merely leather, or prunella." We are quite in agreement with the argument that experience gained in *two or three* satisfactory practices is better than a time of probation with *one* tutor. We adopted this method ourselves and have never regretted it. Many reasons could be given for its utility and beneficial effect.

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With regard to the subjects in which it is desirable for the would-be practitioner to acquire knowledge we can foresee a difficulty in some matters. Experience in parturition cases is not easily acquired nowadays. We have acted as assistant and *locum* in several practices situated *entirely in the country*, and yet have not attended above three or four difficult calving or foaling cases in a year, and if we had been at college we might have missed even these. The tendency with these operations is for the veterinary surgeon to be called in less and less, and where young men live on farms that are well managed the veterinary surgeon may often say good-bye to this class of work. Again, there are other clinical operations that ten men will be able to see where twenty will not. If certified clinical work is made a *sine quâ non* for the diploma, it cannot be expected that every candidate for it will have equal experience in all classes of work.

Much has been made in some quarters about the superiority as raw material of the country-bred man over the town-reared one. As a matter of fact, we do not believe there are many entirely country-bred men in our profession. We can name many instances where the town or city brought up product can give the countryman a start both in intelligence and adaptability; in fact, we know not a few men equal to any in the profession as experienced and expert practitioners whose homes and surroundings have been of the town and city description. Some of our very best veterinary surgeons have been the offspring of parents who kept a small dairy and a stable of horses within the confines of a town or city. The mind moves quicker and on more modern lines in a place where wits are sharpened by contact with other wits than where intelligence is often at a discount among one's entourage. The benefits of "certified clinical work" will certainly be great for the whole future of the profession. There is no such thing as a standstill position. If we do not progress we shall deteriorate. If the suggested plan becomes an accomplished fact it will react favourably both for the practitioner and the collegian. The latter will be getting right guidance and direction, and need not lay himself open to the charge of being a diploma-holding inefficient; the would-be graduate will know whether he is obtaining the necessary clinical experience or not, and can suit his actions accordingly; the tutor will recognize what instruction he ought to give to his charge, and probably endeavour to fulfil his obligations, and the bottle-washing surgery-cleaning, carbolized oil, caustic clam and disproportionate pharmacy denizen era will gradually disappear for ever from the list of the supposed requisites of junior aspirers to the ranks of a learned profession.

G. M.

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General Articles.

OPHTHALMIC MALLEIN FOR THE DIAGNOSIS OF GLANDERS.

By JOHN R. MOHLER,
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AND

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The Ophthalmic Mallein Test.

During the last few years the ophthalmic mallein test has gained great favour in the diagnosis of glanders. The popularity of the test is rapidly gaining wherever it has been applied, and among its supporters we find at the present time the greatest authorities on the subject of glanders and on clinical diagnosis. This method of testing is at present officially recognized in Austria, and the indications are that ere long it will constitute the official test in other countries. The results obtained in Austria, where the test has been employed for several years, are very gratifying, and Professor Schnurer, of that country, one of our greatest authorities on glanders, claims that the control of the disease can be very satisfactorily carried out by the application of the eye test, supplemented in doubtful cases by the agglutination test. Bavaria has recently adopted this method of diagnosis for official testing. In Germany the method is also gaining in favour, and current veterinary literature contains expressions of satisfaction with this test from many German authorities. In the United States the Bureau of Animal Industry, in consideration of the favourable results obtained, has recognized this method of diagnosis for interstate shipments of equines. The test has also been officially recognized by the Canadian authorities, and thus far no sanitary official connected with any of the States in this country has declined to approve this test.

The favourable results which have been obtained with this diagnostic method can no longer be denied. Its practicability is apparent, and its use in the control of glanders appears to be now an absolute necessity.

Simplicity of Procedure.

The ophthalmic test has a great advantage over others because of its very simple application. It may be readily executed by any veterinarian, and its other advantages are that the results are obtained in a comparatively short time, and are, as a rule, distinct and definite. The simplicity of its application is plainly manifest when compared to the subcutaneous test, as it is only necessary to drop two or three drops of concentrated mallein into one of the eyes of the animal to be tested, or, by a still simpler procedure, to dip a camel's-hair brush into mallein and introduce this into the conjunctival sac of the animal. The reaction usually commences in five or six hours after the introduction of the mallein, and lasts from twenty-four to thirty-six hours. A positive reaction is manifested by a purulent secretion from the tested eye. This may be very profuse or slight, sometimes associated with a severe conjunctivitis and œdema of the lids, and at other times without any inflammatory symptoms being present. At times only a very small quantity of pus may be present in the inner canthus of the eye. At other times the reaction may manifest a true pyorrhœa.

The reaction manifests itself in varying degrees in the animals, but the intensity of the reaction has no relation to the extent of the disease in the reactor.

Reliability of the Test.

The available data on the ophthalmic mallein test are sufficient to draw conclusions as to the reliability of the method, and in Austria alone it has been applied in many thousands of cases with uniformly good results.

In considering the good results obtained and the advantages of this method of testing, a concentrated mallein has been prepared for this purpose by the Bureau of Animal Industry, and this was made available to a number of practising veterinarians who desired to give this method of testing a thorough trial. It has also been employed by inspectors of the Bureau of Animal Industry in their field work, and reports are accessible regarding its action for diagnostic purposes in more than 18,000 cases. The results from all sources were uniformly satisfactory. Practising veterinarians who have given this method a trial have

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reported very favourably on the results, and the tests conducted by the bureau inspectors on several thousand animals were also satisfactory. The method has been applied here in Washington whenever possible, and recently in some immunizing tests of glanders conducted by the Bureau of Animal Industry there was a good opportunity to repeatedly employ this test. In all these instances the results were uniformly good. In cases of glanders there appeared a marked purulent conjunctivitis, and the reaction at times was so severe that the animal could not open its tested eye.

Best Results with Raw Mallein.

The essential factor in obtaining satisfactory results from the test appears to be in the use of the right kind of mallein. It must be by all means a concentrated mallein, and apparently the best results follow the use of raw mallein, which, as a rule, represents the mallein obtained after the concentration of the filtrate from the bouillon cultures of the glanders bacilli. The ordinary mallein used for subcutaneous testing is not adaptable, and the failures which have been reported in the literature were without doubt, in the majority of cases, due to the fact that the mallein employed was not sufficiently concentrated. Marioth* correctly asserts that the reaction does not depend as much on the quality and quantity of the mallein as on its concentration. Our experiments in preserving such mallein with the ordinary quantity of 0·5 per cent. carbolic acid showed that it does not interfere with the results of the test, although the lachrymation which follows immediately after the introduction of such mallein is more profuse than when carbolic acid has not been added, but this disappears within one or two hours after the application of the test.

Preparation of the Mallein.

The concentrated mallein which has been used for our work, and which gave such satisfactory results, was prepared at the request of the authors by and in co-operation with Mr. A. M. West, of the Biochemic Division, as follows:—

The media consists of bouillon containing 5 per cent. glycerine, 1 per cent. peptone, and 5 per cent. NaCl. The reaction is that of the natural acidity of the meat, no acid or alkali being

* Monatsch. f. prakt. Tierheilk., Bd. 24, Hft. 7/8, pp. 340-373; Hft. 9/10, pp. 426-456, Stuttgart, 1913.

added. The flasks of media are inoculated with virulent cultures of *Bacillus mallei*, and placed in the incubator at 37·5° C. for a period of two months or more. The stock cultures of *B. mallei* are kept on agar, and their virulence is renewed when necessary by passage through a series of guinea-pigs.

The well-grown cultures show a heavy mass of organisms, which generally sink to the bottom of the flask. This growth is of a whitish colour splotched with brown. The cultures are then removed from the incubator and heated for one hour in the Arnold sterilizer. Then they are stored for two weeks in a dark closet to settle. The clear liquid is then carefully decanted, and the growth proper is discarded.

A measured amount of the decanted liquid is concentrated over a steam bath to one-third its volume. It is then filled into flasks and sterilized and again filtered while hot, first through one, then through three paper filters. Next the clear liquid is passed through a Berkefeld filter. This is followed by a concentration to one-tenth its original volume and by sterilization.

To the raw mallein, concentrated to one-tenth its original volume, is added 0·5 per cent. carbolic acid and 20 per cent. glycerine. Then the liquid is again concentrated to one-tenth its original volume, filtered while hot through filter paper, and sterilized. It is kept in a dark place for a week, and if upon inspection a precipitate is found the mallein is again passed through paper filters and sterilized. The finished product is a clear, sirupy, dark-brown liquid, with a disagreeable odour. The mallein is then bottled, under aseptic conditions, in small phials, and is ready for use.

It is advisable to provide the mallein for the tests in small phials, each containing about 1·5 c.c. of mallein, which is sufficient for testing fifteen horses. After the phial has been opened and part of the contents used for testing, especially if the mallein has been taken out with a camel's-hair brush, the remainder should not be used for tests applied on subsequent days, but should be discarded.

The use of Dry Mallein.

Another form of mallein which has been used quite extensively for the eye test is the mallein siccum, or dry mallein. This represents an alcoholic precipitate of mallein. It is a fine grey

powder, and must be dissolved in water before it is used. The solution loses its effectiveness in a very short time, and must be prepared fresh on the day of the test. Dr. K. F. Meyer, formerly of the University of Pennsylvania and now of the University of California, has used the dry mallein extensively, and at the present time this preparation is employed in Pennsylvania for the application of the ophthalmic test. For this purpose two phials are sent out from the laboratories of the Pennsylvania Livestock Sanitary Board, one containing the powdered mallein, and the other sterile or saline water in quantities which will make a 5 per cent. solution of mallein. The contents of the bottle containing the fluid is poured into the bottle containing the mallein powder, and the test solution is thus prepared. The results with this form of testing in Pennsylvania appear to be highly satisfactory, as may be seen from a publication by Dr. Meyer on the "Conjunctival Reaction for Glanders," in the May, 1913, number of the *Journal of Infectious Diseases*.

The advantages of the use of one as compared with the other of these forms of mallein for the eye test are not marked, as equally good results were obtained from the application of both forms of this product. The fact that the preparation of the raw mallein is less laborious and expensive than the mallein siccum, and that it is ready for use on opening the phial, would probably give this product a greater popularity. It is only natural, however, that in the event of subsequent extensive testings showing the superiority of the dry mallein, it will be given preference over the raw product.

Method of Applying the Test.

Before the application of the ophthalmic test the animals should be carefully examined to ascertain whether the eye shows conjunctivitis or other changes which are associated with suppuration. Should such be present the test should not be applied.

The test consists in introducing into the conjunctival sac of the eyes several drops of either undiluted raw mallein or a solution of precipitated mallein (0·1 to 0·2 c.c. per horse). This may be introduced either with the aid of a camel's-hair brush or with an eyedropper. Only one eye is treated; the other serves as a control for comparison of the reaction. For the testing of horses in the same stable the same dropper or camel's-hair brush may be used for all the animals.

The results of the test should be recorded as follows:—

N=Negative—eye unchanged.

S=Suspicious—seromucous discharge.

P+=Positive—seromucous discharge with purulent flakes.

P++=Positive—distinct purulent discharge.

P+++=Positive—purulent discharge with swelling of the eyelids.

P++++=Positive—strong purulent with swelling and gluing together of both lids.

Effect of the Test on Glandered and Healthy Animals.

As soon as the mallein is introduced into the eye practically all animals show a lachrymation, increased reddening of the con-

FIG. 1.—P + = Seromucous discharge with purulent flakes.

FIG. 2.—P + + = Distinct purulent discharge.

junctiva, and slight photophobia. No significance should be given to these symptoms. They disappear in one to two hours.

Glandered animals are hypersensitive to mallein in a way that the administration of small quantities of mallein produces local inflammatory processes. In larger quantities it produces a febrile general reaction. The hypersensitiveness appears as a rule during the third week after the infection, and reaches its height

in the first few months after the infection. In the subsequent course it may subside in retrogressive cases even to the degree observed in healthy animals, but even in these cases various conditions may bring on an increased sensibility.

The characteristic manifestations of the reaction for glanders commence as a rule in from five to six hours and last twenty-four to thirty-six hours, sometimes longer. The reaction consists of a purulent discharge from the conjunctival sac, which is typical, as well as swelling and gluing of the eyelids. It is advisable to examine the tested animals in a good light from twelve to twenty-four hours after the application of the test. Varying degrees of reactions are illustrated in Plate I, figs. 1 to 4.

A suppurative discharge of varying quantities is considered a positive reaction. The conjunctiva and the eyeball should also be included in the examination after examining the discharge. A pseudo-reaction can be produced by artificial or accidental irritation of the eye. On the other hand, the purulent discharge may have been removed (either by the stable attendant or by the animals licking each other, &c.), and the positive result thus obliterated. In such cases dried pus may be frequently found on the parts around the eye.

Generally the positive ophthalmic reactions are not accompanied by fever or systemic disturbances. Occasionally, however, affected horses are hypersensitive to such a degree that even the few drops of mallein placed in the eye may enter the circulation and produce fever. Therefore it is advisable, when possible, to accompany the ophthalmic reaction with temperature readings. For this purpose the temperature should be taken twice, the first time when the eye test is being made and the second time when it is judged. In a doubtful eye reaction, where there is an increased temperature of $1\frac{1}{2}^{\circ}$ F., the test should be considered positive if the animal had a normal temperature at the time the test was made. As stated before, it should be remembered that the intensity of the reaction has no relation to the extent of the disease in the animal tested.

In the absence of any secretion the test should be considered negative. When there is a mucous secretion or lachrymation during the period of reaction the test must be considered as atypical, and in such cases it may be repeated the same day, when, as a rule, the results are more confirming.

The application of the ophthalmic test should not be repeated more than three times on the same animal within three months, as experiments show that the reaction after the third application within this short period usually loses its intensity in positive cases, and on subsequent tests may be entirely absent. In cases where the results of the second test immediately following the first test are atypical, the blood of such animal may be drawn and forwarded to a laboratory for the serum diagnosis. From experience gained with the eye test such a procedure would become necessary

FIG. 3.—P + + + = Purulent discharge with swelling of the eyelids.

FIG. 4.—P + + + + = Strong purulent discharge with swelling and gluing together of both lids.

VARYING DEGREES OF REACTIONS IN THE OPHTHALMIC MALLEIN TEST FOR GLANDERS.

only in a comparatively few cases. In the control of glanders, animals may be re-tested every six months with satisfactory results.

REPORT OF THE AMERICAN VETERINARY MEDICAL ASSOCIATION ON THE OPHTHALMIC TEST.

The special Committee on the control of glanders of the American Veterinary Medical Association has issued a most excellent report on the various phases of diagnosis of glanders.

The conclusions on the value of the eye test offered by this Committee are in perfect accord with our findings, we therefore deem it advisable to include them in this paper, as follows:—

(1) The ophthalmic test not only meets all the requirements, but is without doubt the most convenient diagnostic method at our command.

(2) Its reliability compares favourably with any of the other tests available.

(3) The reaction is usually very distinct, and doubtful or atypical reactions are rather infrequent.

(4) The ophthalmic test has the advantage that it does not interfere with subsequent serum or other mallein tests if such are deemed necessary.

(5) The test may be repeated within twenty-four hours on same or control eye. If another re-test is necessary, it should not be made in less than three weeks.

(6) The ophthalmic test should be recognized by State and Federal authorities, since its reliability can no longer be doubted.

(7) In all atypical and doubtful cases of the ophthalmic test, the combined complement-fixation and agglutination or subcutaneous mallein test should be utilized for confirmation. Such a procedure would minimize the failure, and would assure the best results in the control of the disease in a single stable or in an entire community.

Conclusion.

The results achieved in Austria with the ophthalmic test have been remarkably successful and deserve the most earnest consideration. The report of Professor Schnurer on "The Results of the Diagnostic Procedure in Glanders in Austria" is a convincing proof as to the value of the eye test in the control of glanders. The senior writer received a communication only a short time ago from Professor Schnurer, and since it deals principally with the diagnostic value of the eye test, a quotation from the letter will no doubt be permissible:—

"I am at the present contemplating collecting the results of the eradication of glanders in Austria during the last three years (1910-1912). During this time 60,894 tests were undertaken on 47,973 horses. Of 272 cases which were found on *post-mortem* to be affected with glanders 240 (88·2 per cent.) were positive,

21 (7·7 per cent.) gave an atypical reaction, while 11 (4 per cent.) were negative. Of the 47,701 healthy horses, 189 (0·39 per cent.) were positive or atypical, the remaining 47,512 (99·61 per cent.) gave a negative reaction.

"According to these results, therefore, the eradication of glanders is only a question of organization—that is, the malleinization of horses at the border and conscientious following up of all suspected horses. Such procedure would, without doubt, result in a complete eradication of glanders. At the Veterinary School of Austria we now have difficulty in showing the student cases of glanders, and for demonstration purposes we are compelled to infect horses artificially, whereas several years ago we had every week at least one case of glanders in our clinics.

"I use as mallein at the present time a product which I myself prepare, which represents a bouillon filtrate from seven different strains of glanders bacilli which has been concentrated to one-tenth of the original volume."

The optimistic view of Professor Schnurer is certainly justified from the results he achieved, and clearly shows that with proper organization in the control work of glanders the eradication of the disease is only a question of time.

The eradication of outbreaks of glanders cannot, of course, be altogether attributed to the eye test, since from the report of Nevermann, veterinary councillor of Prussia, glanders has diminished remarkably in that country, where they employ the combined complement-fixation and agglutination test for the diagnosis, while McGilvray has practically eradicated glanders from the Province of Manitoba by means of the subcutaneous mallein test. The method of testing by means of complement-fixation and agglutination is undoubtedly the most accurate of any available, but since it cannot be as conveniently applied as the eye test, its disadvantages are apparent. There is no doubt that with the application of either the eye test or the combined complement-fixation and agglutination tests, equally good results may be obtained, provided that the work is conscientiously carried out and that all the reactors are destroyed without hesitation.

As long as the authorities will limit themselves to the destruction of clinical cases only and will not take immediate action on reactors of the occult and latent character, glanders will not only continue to exist, but it will spread.—*Bulletin of the U.S. Department of Agriculture*, 1915, No. 166.

General Clinicals.

A PECULIAR SHELL WOUND.

By Lieutenant E. H. WYLY.
Army Veterinary Corps.

At Ypres a number of horses were injured by a shell, and one case (that of a mare) brought to my notice was exceptionally interesting on account of the situation of the wound and the manner in which it had incised the piece of flesh.

The anus itself was completely excised, as perfectly as if it had been done by the surgeon's knife, whilst the tail, vagina, and buttocks were absolutely uninjured. The animal must have been in the act of defæcating when hit by the piece of shell.

This photo shows Lieutenant Wyly in the act of examining the wound shortly after the mare received it. Behind him is seen a brother officer who has since been killed.

There was no hæmorrhage at all, and this point is worth noting, and was caused by the fact that the piece of shell was very hot when it hit the horse. The horse lived for about four days, being eventually shot, and I recovered the piece of shell, which was about 3 in. by 2 in. from the region of the mammary gland. It must have deflected its course immediately upon entry. This animal had no other wounds anywhere on its body.

THE COURSE OF A SHRAPNEL BULLET.

By Lieutenant E. H. WYLY.

Army Veterinary Corps.

At Ypres one of the horses of the 25th Brigade Royal Field Artillery received a peculiar wound from a shrapnel bullet, which is worth recording from the peculiar course it took.

We were sheltering from aeroplane vision by the side of a wood when a German shrapnel shell burst on percussion amongst the trees, killing four horses outright (all thoracic wounds) and wounding ten others, two of these latter so severely that I shot them immediately. Of the others, one had a bullet wound on the near side of the neck, just where one usually inserts mallein. It entered here and passed through to the other side as far as the skin and then became deflected downwards over the shoulder and along the thorax, leaving its course clearly demonstrated by a mark like the weal produced by the cut of a whip. By palpation I traced this up with my hand as far as the fourteenth or fifteenth rib, where I could distinctly feel the bullet rolling about subcutaneously, and from this situation I removed it with a scalpel quite readily.

Further progress was uneventful, and a careful search over the horse's body revealed no trace of wound elsewhere.

SPECIFIC CORONITIS IN THE HORSE.

By F. C. MAHON, M.R.C.V.S.

Chiswick, London, W.

Definition.—In describing this condition under the above heading, we are following the lead of Mr. Malcolm, F.R.C.V.S., Birmingham. We may define it as a "chronic inflammatory condition of the keratogenous membrane," usually confined to that of the coronary cushion, the ergots, and chestnuts, but sometimes extending to that of the frog and sole, characterized by a malsecretion of the affected membrane similar to that observed in canker.

Causes.—The cause which we have indicated for canker, viz.,

a specific one, is in all probability the one operating here. Apparently there is a variance of opinion as to whether the disease is actually canker or not. We think, however, that the character of the secretion of the affected membranes, the appearance of the growths, the manner in which they react to the hot iron, the comparative absence of pain, and other points of similarity, point to the fact that the two conditions are actually identical. In other words, the cause is precisely the same, and the only point of difference is the alteration in the point of attack.

Symptoms.—Like canker, the disease is insidious in onset. In precisely similar manner the horn and, in this case, the skin of the coronet are underrun.

Later there is a partial shedding and fissuring of the undermined horn, and the exuding of the characteristic discharge in this case not so watery as that of canker.

In 1901, whilst acting for a professional friend at Nottingham, I encountered a case which I carefully watched and attended with good results. From notes compiled roughly, which I consider, or at least hope, still worthy of appearing in the columns of THE VETERINARY JOURNAL, and any imperfections in description overlooked by its many readers more scientific and learned than the humble writer, I put down what was written without alteration of language or embellishments of any description.

Subject.—An aged plethoric chestnut horse, the property of a leading Nottingham miller, constitutionally sound, a good honest worker. History does not reveal any illness worthy of note. Weather influences not of an extraordinary character. Local influences, wetting of feet, coronets, &c., not out of the ordinary. Farrier reported no injury by tread, nor did he ever recollect anything out of the ordinary, though he had shod the horse for years. My attention was first drawn to a supposed defect of the off hock, later the knees, then to a swollen, tender appearance, rather painful to the touch, of both fore coronets. I stopped him on the fourth day after primary examination and rested him a fortnight. When proceeding to town I left him in my friend's charge. The subject being of interest to me and uncommon in character can be proved by a letter of inquiry a year or more afterwards respecting the same horse. Its purport is: "That horse with so-called coronitis belonging to E—— Bros. was, after a little further treatment, turned out to grass,

and although he was lame for two or three months he eventually became better, and has now been working for several months, and there is little or no indication of the trouble he has suffered from (April 27, 1903)."

A few hours after being eased from work the coronets of all four feet became intensely swollen, the action of the horse simulating when moved that of laminitis, and he stood occasionally in the attitudes too familiar to most practitioners.

A few days later on visiting my patient I found an eruption with sero-sanguineous discharge, and an evil smell proceeding from the boils. Later the exudation had an odour, and was

characteristic of "canker." The temperature became elevated; highest point 104·7 F. No symptoms of purpura or influenza were ever shown. I confess I was rather puzzled with the case. Referred to available works. The only account given by writers I perused was that of Professor Williams recording cases (Montreal), described, I believe, by Professor M'Eachran, and which Professor Williams designates as "*carbuncle of the coronary band.*"

My chief treatment after warm poultices was that of painting

the coronets daily with tincture of iodine, and occasionally the angry ulcerated surfaces and edges of the ulcers with perchloride of iron, bandaging same after surrounding parts with medicated cotton-wool to exclude air. Lowered diet. Gave internally liquor arsenicalis in drinking water. In food liquor potassæ iodidi. Finally, as a powder in food, pulv. nux vomica, gentian, and iron.

A careful examination of the lymphatics denoted nothing unusual. This I was very careful in doing, as glanders was reported at the time to be occasionally appearing in surrounding districts.

The soil upon which the stable was built, the food, and water supply were all carefully examined. I even had the water analysed, but no trace of animal or vegetable poisons was discovered.

Reading Messrs. Malcolm and Reeks's reports of "Specific Coronitis" now, I venture to consider this case the same, at least in the majority of its features. In later years I have met with identical cases as described by these able observers, in railway horses especially, and in cold weather.

Foot-rot in sheep one has repeatedly encountered, and inter-digital eczema in the cow, especially 1889-1890 whilst in a country practice, in which disease, as is well known, the eruption commences as in canker, either upon the solar plexus of the foot or in the inter-digital structures (Williams).

In foot-and-mouth disease separation always commences at the coronary junction (Williams).

The animal does not urinate inordinately. Urine analysis denotes nothing out of the common.

No particular foods have been relegated to the *rôle* of its causation (Williams).

In my case all four feet within a few days were affected. No constitutional symptoms save the febricula, which reached its acme seven days from the first visible coronal eruption. No other case approaching this had ever been encountered by local practitioners.

I think without cavil that Mr. Reeks's description of specific coronitis in his "Work on the Horse's Foot" is very lucid, and in my humble opinion coincides with the description of my case. Therefore, in adducing these long-hidden notes, taken hurriedly

in a busy practice, I venture to hope it will be one record of a class of case, not numbered by its hundreds, but only occasionally met with in an ordinary practice, although apparently encountered oftener in certain districts and veterinary practices, comprising low-lying damp soils in particular.

I should like to hear from THE VETERINARY JOURNAL readers of any cases occurring in London or suburban practices similar to those of specific coronitis as described by Mr. Reeks in his "Work on the Horse's Foot."

A FEW CLINICAL CASES (MOSTLY UNSATISFACTORY)

BY T. I. ALEXANDER, M.R.C.V.S.
Kinsale.

Case 1.—Last December I was consulted about a horse which was rapidly losing condition. On inquiry from the owner I learned that he had lately bought the animal in off a rifle range where he had been grazing during the day, being housed at night.

History and examination did not reveal symptoms of any disease accompanied by wasting, and I was reduced to prescribing 1 oz. doses of sodii bicarb. in the drinking water and performing the operation known as "getting his teeth filed." I believed it was some form of subacute indigestion. I then forgot about him. On January 5 the owner asked me to go and see other horses on his farm, which he said were also losing condition, the first patient being no better. I found three horses and one mare stabled and one mare grazing on the range.

A peculiar symptom in connection with one of the horses, aged 15 years, was that he used to knuckle over on the fore fetlocks, and the owner said he nearly came down several times. The mare which was stabled, he said, also showed signs of weakness on her forelegs.

I, of course, suspected lead poisoning, especially as there had been an enormous amount of firing taking place on the range since last August. There was, however, no sign of the "blue line" present on the gums of any of the horses.

XUM

Examination and testing of the water supply, which was from a well, revealed nothing abnormal. In fact, it was a particularly good specimen of water. Examination of forage showed it to be sweet, clean, and sound. I, however, advised administration of two pints of ol. lini. to each horse and repeat in three days and an entire change of food, oats, hay, &c.; also housing of all the horses day and night, as it was evident that something on the range which they were picking up was the cause of the trouble.

An exhaustive inspection of the range (which nearly led to my arrest as a German spy) failed to reveal any botanical abnormality.

(I may be permitted to remark here that, though I know how many stamens are in a wallflower, the curriculum through which I passed when at college included no practical field training in the recognition of poisonous herbs, and when and where to look for them. And what is more important to a veterinary surgeon?)

On January 14 the owner again arrived to tell me that the mare which I found stabled on my first visit was down and could not get up, and that he believed that "the wather was playing agin her," *i.e.*, inability to micturate, a diagnosis beloved by farmers here in default of anything else.

On arrival I found the mare down and, with the exception of very slight twinges of colic, apparently normal as regards pulse and respirations. Endeavours to get her on her feet were hopeless, as she appeared to have lost all power in the fore limbs, and could not raise her fore part even with assistance. I gave her as placebo 2 oz. spts. æth, nit., propped her up, and left. She died next day. On the 18th the owner sent a message to say they had found the old horse dead in the stable in the morning, so I decided on a *post-mortem*.

The owner admitted that he had allowed him out on the range the evening before, disregarding my instructions, as per usual.

I found a distended stomach apparently packed with ingesta, in the thorax a ruptured diaphragm (*ante-mortem*), and a ruptured common aorta. The thorax, as a result, contained two enormous blood-clots, each the size of a liver. It was clear that he had gone to sleep standing and in his debilitated condition fallen, the engorged stomach by concussion rupturing the dia-

phragm and aorta, and death occurred rapidly from internal hæmorrhage. All the organs (liver, spleen, kidneys, and lungs) appeared healthy. Amongst the contents of the stomach, consisting of chewed hay and oats and a small quantity of poor grass, were very dark green masses of a chewed material with a most bitter smell: the best description of it was that it resembled the smell of a malt-house.

Though I have no recollection of any peculiar smell, the owner said a friend of his had remarked to him one day "that their dung smelled queerly." I believe this must have been the cause of the digestive trouble. I forwarded some of it to an authority on the subject, asking whether it would be heather or broom, of which there was a quantity on the range. The answer I got back was: "That material contained an amount of woody fibre, *probably* heather." Not very illuminating.

Now this man has had horses grazing on this range for twenty-five years and never lost one in a similar manner before. Though the rest of the horses have been doing well ever since and are kept off the range, I admit this experience left me in a bit of a fog. Is the ingestion of heather capable of producing such digestive disturbance, or am I perchance on the wrong track? I would be glad of information on the subject.

I may say the owner was not giving these horses any sort of meal or patent foods, nor had they at any time access to "grains."

Case 2.—I was called by wire to attend a sick bullock, who was very bad and dying. On arrival I was informed he had died "just ten minutes before I came in the gate." I was also informed that a bullock which was running with him had died the day before and showed exactly the same symptoms, viz., a discharge of a black tarry-looking material from the bowels, an inclination to run round in circles, finally exhaustion, convulsions, and death. I held a *post-mortem* in a small house where carcase had been dragged, and on opening the abdomen one's nostrils were at once assailed with a most penetrating pungent odour. As the house was small, the day a cold one, and the animal still warm, this odour could be appreciated to the full. Organs were normal. Abomasum contained about 1 lb. of river gravel, probably accumulated there and taken in whilst drinking at a river, but it was in the rumen where lay the chief seat of interest. It contained a normal

XUM

quantity of ingesta, but equally mixed with it was a large quantity of chewed leaves, and it was from this mass that the odour was emanating. Examination of material in conjunction with the smell, which after some time I recognized as being similar to Prussic acid, revealed them to be laurel leaves.

There are literally hundreds of laurels on this farm, and though the owner has had stock of all kinds running on it for twenty years he never remembered losing a beast in a similar fashion before. Why do animals pass a shrub to-day and eat it to-morrow? The age-long question which owners ask and veterinary surgeons cannot answer.

It was satisfactory in this case to be able to say to owner: "Behold, a case of laurel poisoning," instead of, as in the first case, humming and hawing, trying to look wise, and taking refuge in subterfuges.

(To be continued.)

AN ABDOMINAL CASE.

By RUSTICUS.

Subject.—A six-year-old, in-foal, half-bred, Shire mare.

At 6 a.m. on March 6, 1914, I was requested by owner to attend the animal, which had been griped during the greater part of the previous night. On my arrival I found the mare fairly quiet, pulse 60, temperature 101° F., slight tympany, respirations 20 per minute, rectum empty, but a certain amount of straining occurred during the passage of hand into the rectum.

I gave the diagnosis: "Impaction of the small intestines, probably at the ileocæcal valve, possibly a twist, but as there was an absence of violence and sweating I did not absolutely think a twist had occurred." The stimulant treatment advocated by Mr. H. Caulton Reeks was adopted. The mare remained in about the same condition all day. There were only two symptoms exhibited at 7.30 p.m. which seemed to indicate to me that volvulus might be present.

Firstly, the mare crouched several times before lying down. Secondly, when down she would poise on her back with her knees and hocks flexed for an hour or more without moving.

At 11 a.m. the next day the tympany had subsided, pulse 75, temperature 102·6° F. No dung had been passed. The mare did not sweat, but could only get relief when lying on her back, which position the owner said she had assumed during the greater part of the night.

My opinion now was one of volvulus. The mare was destroyed, and *post-mortem* revealed hernia of a loop of the ileum through Meckel's diverticulum and aneurism of the posterior aorta.

The owner, who bred the mare, said that she had never been ill before.

In this case I should think the aneurism was the primary cause of the colic, and that hernia and strangulation of the bowel took place during the first night of the animal's illness. Was this a case for laparotomy?

SOME NOTES INCIDENTAL TO PARTURITION.

By RUSTICUS.

Subject.—A five-year-old Shire mare.

I was called at 7 p.m. on April 12, 1913, to attend the above subject, which had foaled alone during the previous night.

The mare was recumbent. She got up with difficulty, but stood firmly on her legs; when made to walk she reeled as if she had injured her spine; there appeared to me a left lateral movement of the hind quarters, but without any dragging of the toe or knuckling of the fetlock joint.

Pulse, temperature, and respirations were normal; appetite for bran mash and scalded hay good. Passage of fæces normal, but owner said he had not noticed her urinate. Passed the catheter and removed about two quarts of urine.

Examination *per rectum* revealed tenderness of the region of the left innominate bone. I formed the diagnosis, rupture of the left sacro-sciatic ligament.

Treatment.—Stimulating liniment to the left haunch. Nux vomica internally for two weeks.

XUM

The mare remained in the same condition all the summer, but finally recovered, and was put to work again in November. She is still employed on the farm, but the muscles of the left haunch are slightly atrophied.

(*To be continued.*)

THREE CASES TREATED BY AUTOGENOUS VACCINES.

By J. F. D. TUTT, M.R.C.V.S.
Winchester.

Case 1.

Subject.—Bay mare. Aged. *Disease.*—Chronic uterine discharge. *Micro-organisms present.*—(1) A streptococcus; (2) a club-shaped bacillus.

From these Professor Annett, of the Runcorn laboratories, prepared an autogenous vaccine, each cubic centimetre of which contained 6,000,000,000 organisms, made up of 3,000,000,000 of each of the above-named organisms.

The first injection of 6,000,000,000 organisms was made on February 2, and the injections were repeated at intervals of five to seven days. Latterly the dose was increased to 12,000,000,000 organisms.

Remarks.—At first very little improvement was noted, but later on a gradual diminution with final cessation of the discharge resulted. Previous to using vaccine, douches of all the usual agents were tried, but with no success.

Result.—Cured.

Case 2.

Subject.—Grey mare. *Disease.*—Suppurating fetlock. *Micro-organisms present.*—(1) *Bacillus coli;* (2) *Staphylococcus albus;* (3) *Streptococcus brevis;* (4) an elongated diplococcus.

From these an autogenous vaccine was prepared by Professor Annett, each cubic centimetre of which contained 8,000,000,000 organisms in all, made up of 2,000,000,000 of each of the above-named organisms.

The first dose of 8,000,000,000 organisms was given on February 13, and repeated at intervals of five to seven days. In conjunction with vaccine treatment, Bier's method of inducing hyperæmia was adopted.

Remarks and Result.—The discharge gradually became less

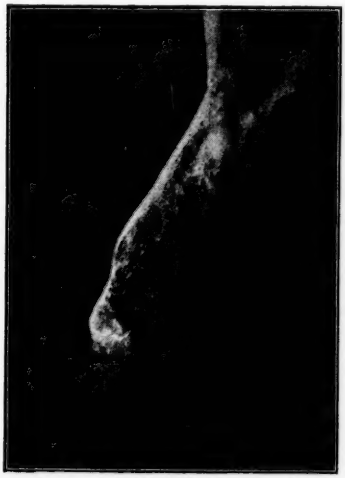
towards the end of the vaccine treatment and has now ceased, although some swelling still remains.

CASE 3.

Subject.—Shire stallion. *Disease.*—Suppurating fetlock. *Micro-organisms present.*—(1) *Streptococcus brevis;* (2) *Bacillus coli;* (3) *Staphylococcus albus.*

From these Professor Annett prepared an autogenous vaccine, each cubic centimetre of which contained 15,000,000,000 organisms in all, made up of 5,000,000,000 of each of the organisms stated.

March 20.—15,000,000,000 organisms injected.



March 25.—30,000,000,000 organisms injected. Discharge stopped.

April 1.—45,000,000,000 organisms injected. Wounds practically healed.

April 3.—Discharged cured.

Remarks.—In conjunction with and before vaccine treatment, Bier's hyperæmia treatment was adopted, but no alteration in the case was observed until I adopted vaccine treatment as well. I had the wounds, which were three in number, cleansed three times a day with dilute solution of coal tar and then anointed with Vitiod ointment.

XUM

PAPILLOMATOUS CYSTITIS IN A COW.

By H. A. REID, F.R.C.V.S., D.V.H., F.R.S.E.
Officer in Charge, Veterinary Laboratory, Wallaceville, New Zealand.

The accompanying photographs represent a rather interesting case of villous papilloma of the bladder observed at one of the meat export slaughter-houses.

The subject, a cow, had been sent in for slaughter. She was in very fair condition, the only noticeable abnormality being a tendency to pass, at irregular intervals, small amounts of slightly blood-stained urine.

On *post-mortem* examination by the Government Inspector the bladder was found to be profoundly altered, and the kidneys also were diseased.

These organs were secured and forwarded to the laboratory for further examination.

The bladder was enlarged and its walls much thickened (1·4 cm.), with corresponding narrowing of the lumen.

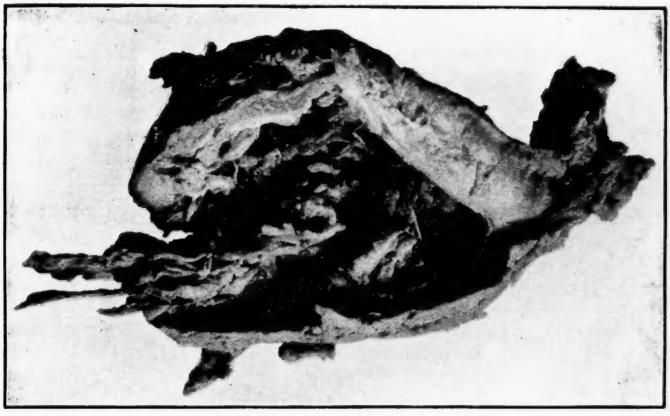
The interior was filled with a yellowish-red mass of fleshy, gelatinous material and numerous hæmorrhagic clots.

Externally, in at least two places, there appeared extrusions of the internal mass through ulcerations in the wall of the bladder.

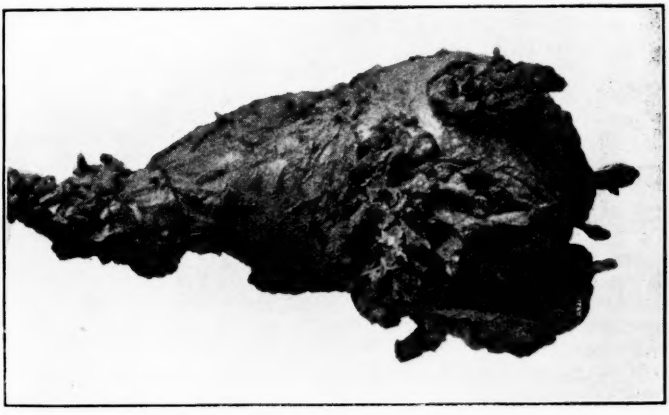
What remained of the mucous lining showed evidence of a phlegmanous cystitis.

One of the kidneys was slightly atrophied. Both showed beneath the capsule a number of raised whitish spots. On section pus was found in the pelvis, this condition being due to an ascending suppurative nephritis.

The case is remarkable as illustrating the extent to which the animal was affected without showing any very marked loss of condition, as indicated by the fact of her being considered fit for slaughter for human consumption.



Bladder cut open to show internal aspect.



Showing the extruding portions of villous mass.

Abstract.

BOARD OF AGRICULTURE AND FISHERIES.

ANNUAL REPORT OF PROCEEDINGS UNDER THE DISEASES OF ANIMALS ACTS, THE MARKETS AND FAIRS (WEIGHING OF CATTLE) ACTS, &c., FOR THE YEAR 1914.

IMMEDIATELY upon the outbreak of the European War in August, steps were taken so to modify the procedure under the Diseases of Animals Acts as to relieve the local authorities and their police of such duties as could be suspended temporarily without seriously affecting the operations against contagious diseases in animals. At the same time the procedure of the Board in connection with outbreaks of swine fever was also modified, with the object of conserving the supply of swine, including breeding swine.

In the former connection the operation of the Tuberculosis Order of 1914 was entirely suspended, as was that of the Parasitic Mange Order of 1911, except as regards the prohibition of the exposure in markets or the movement of affected animals. The operation of the general Orders requiring the annual dipping of all sheep was also suspended, but certain special sheep-dipping Orders, applying to particular districts, were allowed to remain in force.

A modification was also made as regards the restrictions under the Swine Fever (Regulation of Movement) Order of 1908 affecting the movement of swine for slaughter so as to allow of such movement on a declaration of the owner as to the health of the swine to be moved, without the issue of a licence by the police authorities authorizing each particular movement. As regards swine fever outbreaks, the instructions to the Board's inspectors were varied so as to require the slaughter by them of all swine remaining alive on infected premises only in cases in which effective isolation was found to be impracticable. The arrangements hitherto obtaining for the slaughter, with compensation, of breeding animals found alive on swine fever infected premises were cancelled, and the special experimental procedure in force in Scotland and in Wales, under which all swine on infected premises, and also swine found on other premises which had been recently in contact with the swine on the infected premises, were valued and slaughtered by the Board's officers, was suspended.

The exceptional conditions obtaining in the year 1914 will have, therefore, to be taken into account in any comparative review of the operations against contagious diseases in animals which may be made in future years.

The appearance early in the year of foot-and-mouth disease in Ireland afforded a severe test of, and at the same time a practical justification for, the arrangements made in January, 1913, for controlling permanently the landing in Great Britain

of animals from Ireland. As will be seen from subsequent paragraphs of the report, the disease obtained a foothold in the landing-place for Irish animals at Birkenhead, and appeared subsequently during the months of February and March in the City of Liverpool, and also in the counties of Durham, Worcestershire, and Carnarvonshire. The disease was not eradicated from Ireland until the middle of the month of July. In the month of August disease made its reappearance in Great Britain in the neighbourhood of Grimsby, Lincolnshire; in October, both at Deal, in Kent, and near Wellingborough, in Northamptonshire; and in December, near Bedford. This latter series of apparently isolated outbreaks was not, so far as can be ascertained, in any way connected with the outbreaks in Ireland. In all, twenty-seven outbreaks of foot-and-mouth disease were confirmed in Great Britain in 1914, as against two in the previous year.

The position as regards swine fever has been in the highest degree unsatisfactory throughout the year, and in several districts the outbreaks have been of a most virulent type. The total of 4,356 outbreaks exceeds by 1,783 the number confirmed in 1913. In the course of the autumn extended arrangements for the application of treatment by anti-swine-fever serum were brought into operation, but sufficient time has not yet elapsed for any judgment to be formed as to the effect of the treatment in reducing the prevalence of the disease, the stamping out of which may now almost be regarded as beyond the reach of the procedure at present in operation.

For the reasons given in the section of the report dealing with tuberculosis in bovine animals, material is lacking for any comparative statement regarding that disease, and owing to the suspension of the operation of the Parasitic Mange Order, the figures for parasitic mange in 1913 and 1914 are only comparable in respect of the first thirty-two weeks of each year. During that period 1,511 outbreaks of the latter disease were reported by local authorities in 1914, as against 1,846 outbreaks in 1913. A few additional outbreaks were dealt with by local authorities after the suspension of the Order, bringing the total number reported up to 1,530. The number of outbreaks of anthrax confirmed during the year 1914 was 722, an increase of 128 outbreaks as compared with the previous year. The number of outbreaks of glanders shows, on the other hand, a substantial decline, viz., 97 outbreaks in 1914, as compared with 162 in 1913. Of sheep-scab, 226 outbreaks were reported to the Board in 1914, as against 235 in 1913.

Foot-and-mouth Disease.

From January 31, 1914, onwards the attention of the division was engaged, almost without cessation, on matters connected with foot-and-mouth disease, so much so, that although the actual number of outbreaks in Great Britain has in previous years been higher, it has probably never before been the case that the disease has been more troublesome to deal with from an administrative point of view. In this connection, the fact

that twenty-nine suspected cases of the disease had to be dealt with in addition to the twenty-seven confirmed outbreaks must not be lost sight of.

In these circumstances, the fact that it has been possible to maintain in this country a position which compares very favourably with that of most Continental countries, in spite of the risks incurred from the disorganization caused by the War, and the constant arrivals in England of refugees from the Continent, and of soldiers and others who have been engaged in the military operations, is a matter for satisfaction, since, although during the autumn unconnected outbreaks of this disease occurred at four distinct centres in England, the measures adopted have sufficed to prevent any general spread of infection.

The havoc which follows an initial failure to secure control of this disease is well illustrated by the experience of the United States of America. Since the suppression of the serious outbreak in 1908-1909, the United States had enjoyed a period of complete immunity from this disease. In October last the disease again made its appearance near Niles, in the State of Michigan, and by the beginning of December it had spread both eastwards and westwards to such an extent that outbreaks had been discovered in no fewer than 210 counties in eighteen separate States. From the State of Washington, on the western coast, to New Hampshire and Maryland on the eastern coast, hardly a State escaped infection, and, notwithstanding the fact that by the end of the year the disease was stated to be well in hand, the later information does not go to show that the area affected has been substantially decreased or that the end of the outbreak is in sight.

Owing to the fact that all the foreign animals' wharves in this country were at the time closed, this serious outbreak did not call for administrative action, so far as the Board were concerned, in connection with the importation of live animals, but it appears desirable that some reference should be made to it in this report, as, in other circumstances, steps designed to protect this country from the risk of the introduction of infection would have been necessary.

Tuberculosis.

The year 1914 was a period of transition so far as operations against bovine tuberculosis are concerned, inasmuch as a revised Order came into force on July 1, 1914, which not only introduced a new basis for the valuation of animals to be slaughtered under the Order, but added to the forms of tuberculosis to be dealt with thereunder by requiring the slaughter of any animal found by the local authority to be suffering from a chronic cough and showing definite clinical signs of tuberculosis.

It will be convenient, therefore, to review separately the proceedings under the revoked Order during the full period in which it remained in force, and those under the new Order during the period of its operation commencing July 1.

XUM

The Order of 1913.

This Order remained in force from May 1, 1913, to June 30, 1914, a period of fourteen months.

It is to be observed that so far as England is concerned the average number of animals dealt with monthly during 1914 dwindled very considerably. As regards Wales, the monthly average during the two periods varied but slightly, whilst in Scotland there has been an apparent increase. The latter figures must, however, be discounted owing to the fact that there was a very considerable delay on the part of a number of Scottish local authorities in putting the Order into force in their respective districts, so that it was not until the month of November, 1913, that its operation became general in that country, after which the average number of animals dealt with remained fairly constant.

In Great Britain, as a whole, during the full period of operation of the Order, 7,952 notices of intended slaughter were received from local authorities in respect of 7,378 premises, divided between the three countries as follows: England, 6,181 notices in respect of 5,702 premises; Wales, 348 notices in respect of animals on 333 premises; and Scotland, 1,423 notices relating to animals on 1,343 premises.

As regards the distribution of the disease, the position did not alter appreciably in the first six months of the year 1914, and there was no change in the order of the first six counties, which were Lancashire (713 premises, 747 animals), West Riding of Yorkshire (616 premises, 645 animals), Chester (476 premises, 517 animals), Wiltshire (357 premises, 433 animals), Derbyshire (291 premises, 304 animals), and Staffordshire (290 premises, 306 animals). In three other counties, the number of premises involved exceeded 150, namely, Devon (188), Cornwall (179), and Somerset (151). Nine counties made returns relating to more than 100 and less than 150 premises, while in ten counties the numbers were over 50 and less than 100. Twelve counties returned from 25 to 50 premises as affected, and in the remaining nine, less than 25 premises were involved in each case.

Of the boroughs in the English counties, two returned 42 premises as affected (Liverpool and Sheffield), Bradford (34), Leeds (31), Bacup (27), Rawtenstall (23), and Halifax (21) being the next. In ten other boroughs the number of premises concerned exceeded 10.

As regards Wales, Anglesey returned 103 premises; Flint, 78; and Denbigh, 71. Carnarvonshire made returns relating to 26 premises, but of the other eight counties in Wales, one (Radnor) did not return any premises as affected, and the other seven returned less than 25—the numbers ranging from 15 in Merioneth to 1 in Pembroke, in the last-mentioned case the premises being situate in the borough of Pembroke.

In Scotland, the number of premises involved exceeded 150 in two cases (Aberdeen 158 and Ayr 154), the next counties in order being Lanark (145), Kirkcudbright (120), and Forfar (108). Four other counties returned more than 50 premises, and four

more than 25 and less than 50. In eighteen counties the number varied from 1 to 24, and in two cases (Shetland and Peebles) no notices were received by the Board.

Perth (22), Edinburgh (14), and Greenock (13) were the only burghs or cities which returned more than 10 premises.

The Order of 1914.

The Order of 1913 was issued largely on an experimental basis, and experience gained in its administration revealed certain points on which amendment of its provisions appeared desirable. One of the requirements which had become the subject of criticism was that under which animals had to be valued on a double basis; namely (*a*) that the cause of their apparent illness or defect was tuberculosis, and (*b*) that such illness or defect was not caused by tuberculosis. The reason for the provision in the old Order was given in the Report for last year, but after full consideration of the representations received from various quarters it was decided that the new Order should provide for a single valuation based on the market value of the animal at the time of valuation.

This change served also to meet the complaint that the compensation payable to owners of animals slaughtered by a local authority under the old Order was inadequate, since, although in the new Order the scale of compensation, viz., the full value of the animal and a further sum of 20s. where the *post-mortem* examination does not show tuberculosis; three-fourths of the valuation where such examination shows the disease to be present otherwise than in an advanced form; and one-fourth of the valuation where the animal is certified to be suffering from advanced tuberculosis, has not been altered, the amount now payable is assessed on the market value of the animal, instead of upon its tuberculous or non-tuberculous value, as the case may be.

The third chief cause of complaint against the old Order was connected with the expenses of administration. At the time when the issue of that Order was decided upon it was anticipated that the cost of compensation would amount to a very high figure, and that an Exchequer contribution by way of refund to local authorities of *one-half of the net cost* (*i.e.*, the amount of compensation less the proceeds of the sale of the carcases or parts of the carcases of slaughtered animals), arising under that head would provide an equitable basis for the distribution of the burden between local and Imperial funds. The causes which led to this anticipation being falsified are discussed in the report above referred to, but, whatever circumstances may have contributed to the result, the fact remained that the expenses of administration, apart from compensation, were found in practice to bear a very much higher proportion to the total cost than had been expected.

Before issuing the new Order, therefore, the Board approached the Lords Commissioners of the Treasury on the subject of an alteration of the basis upon which the Exchequer contribution

should be calculated, designed to relieve local funds of some larger proportion of the total cost of administering the Order. After the point at issue had been considered in all its aspects, their lordships decided that such contribution should continue to take the form of a refund of a proportion of the actual payments made by local authorities by way of compensation for animals slaughtered, but that the amount to be refunded under any new Order for the remainder of the period of five years for which an Exchequer contribution had been promised should be *three-fourths of the gross compensation* (*i.e.*, without any deduction in respect of the proceeds of the sale of carcases), computed on the market value of the animal as ascertained by the valuer.

The effect of this decision is not only that a larger proportion of the compensation payable under the new Order falls ultimately to be defrayed directly from Imperial funds, but that the balance of such compensation, except as regards cases in which the amount of salvage obtained falls short of one-fourth of the sum payable as compensation, will not be a charge on local funds, inasmuch as the local authorities are authorized to retain all sums received by them as salvage in respect of the carcases, hides, &c., of slaughtered animals, except where surplus proceeds of salvage are payable by them to the owner of the animals on account of the fact that the amount thus received exceeded the amount paid as compensation for the live animal.

In addition to the above-mentioned changes, the scope of the Order was extended by requiring that a report should be made by the owner or person in charge in respect of any bovine animals suffering from chronic cough and showing definite clinical signs of tuberculosis. All such animals now become the subject of the veterinary inquiry prescribed in the Order, and where the report of the veterinary inspector shows that the suspected animal is so affected, its slaughter, with compensation, by the local authority is provided for. This new provision will enable the local authority to deal with animals of a distinctly dangerous class, from the point of view of the spread of the disease amongst animals, at an earlier period than would have been possible under the former Order.

The complete figures for the year are accordingly that as regards Great Britain notifications were received in respect of 3,976 premises, 4,240 animals being returned as diseased. In view of the facts above set out these figures have little or no value for purposes of future comparisons.

Returns for July, 1914.

Some light, however, is thrown upon the probable effects of the Order of 1914 as regards the number of animals falling to be dealt with under the extended provisions of the new Order by the returns for the month of July, which show that the total number of notifications received was 766, the number of animals returned as diseased, including animals suffering from chronic cough and showing definite clinical signs of tuberculosis being 816.

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Swine Fever.

In no year since 1896 has the figure as to the total number of outbreaks of swine fever in Great Britain been so high as in 1914. During last year 4,356 outbreaks were confirmed, as compared with 2,573 outbreaks in 1913 and 2,920 in 1912. In 1896 the outbreaks numbered 5,166. As compared with 1913, the outbreaks in Great Britain in 1914 show an increase of 1,783. In England the increase in the number of outbreaks was 1,805, in Scotland 6. Wales, on the other hand, shows a small decrease of 28 outbreaks. The total number of swine slaughtered as diseased or exposed to infection was 39,277, as against 32,034 in 1913, but the suspension of the slaughter arrangements owing to the War renders these figures non-comparable.

The number of reports of the suspected existence of the disease received during the year, viz., 19,125, largely exceeded the high figures of 14,044, and 16,204 recorded in 1913 and 1912 respectively, and there was a percentage of outbreaks to reports of 22·8.

It was noted in the Report for 1913 [Cd. 7321] that during the latter half of that year the position, which had given evidence of some slight improvement in the earlier part of the year, was becoming less satisfactory, and subsequent events showed that the unfavourable turn in respect of this disease did, in fact, continue. During the first half of the year 1914 the outbreaks exceeded those in the corresponding period of 1913 by 958, and in the second half by 825, and the actual number of outbreaks in the second half of 1914 was only 20 fewer than in the first half of the year, the figures for the concluding quarter being exceptionally unfavourable. The outlook for 1915 must, therefore, be regarded as a gloomy one. It is accordingly with a full sense of the seriousness of the existing situation that the following points are put on record as showing that the set-back in the operations against the disease is not so general as might at first sight be inferred from the figures relating to the country as a whole.

In the five eastern counties, Norfolk, Suffolk, Cambridge, the Isle of Ely, and Essex there occurred in 1914 no fewer than 1,247 outbreaks of swine fever, an increase of 918 outbreaks over the figure for 1913. In the three ridings of Yorkshire and the three divisions of Lincolnshire 696 outbreaks were confirmed, an increase of 213. Again, in the southern and south-western counties of England, including Gloucestershire, 1,268 outbreaks were returned; that is to say, 453 in excess of the figure for the previous year.

It will thus be seen that of the excess of 1,783 outbreaks in Great Britain as a whole 1,584 are accounted for in the above-mentioned counties, which are situated on the eastern and southern coasts of England, or adjacent thereto, or, in other words, as regards the whole of the remainder of England, and in Wales and Scotland, the number of outbreaks of the disease in 1914 exceeded those in 1913 by 199 only.

In some parts of Suffolk and Essex and in West Sussex the disease was met with in an extremely virulent form. This fact,

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taken into consideration with the exceptional conditions existing in the eastern and southern counties owing to military operations, makes it not, perhaps, very surprising that the disease should have made such headway. The pressure on the Inspectorate occasioned by the unexpected call made upon them during the year has also made it increasingly difficult to follow up rapidly and thoroughly the history of each outbreak, and thus to keep to some extent ahead of the disease. In these circumstances, the fact that the epidemic has not been even more widespread is a matter for some satisfaction, and it is to the existence of general precautionary restrictions on the movement of swine that this result may safely be attributed.

Turning to the position in individual counties, it is to be noted that the very large total of 485 outbreaks was reached in Suffolk, as against 71 in the previous year. Essex, with 471 outbreaks, as against 124, was very little behind that figure.

In the West Riding of Yorkshire 328 outbreaks were recorded, against 217 in 1913; in Gloucestershire, 238 against 116; and in Norfolk, 213 against 87. The return for Wiltshire is 185 outbreaks against 177 in the previous year; for Somerset, 158 against 147; for Kent, 155 against 114; for Surrey, 108 against 56; and for the North Riding of Yorkshire, 101 against 67.

There were only seven counties in England, namely, Cheshire, Shropshire, Hertfordshire, Buckinghamshire, East Sussex, the Isle of Wight, and Monmouth in which any improvement upon the figures of 1913 is shown, and the most notable decrease was that of 34 outbreaks in Bucks. In Wales, improvement is shown in the counties of Denbigh, Glamorgan, Flint, and Montgomery; whilst in Scotland the same may be said of Banff, Dumfries, Linlithgow, Midlothian, and Perth.

In what must be on the whole a very unfavourable review of the situation, the fact is not to be lost sight of that, according to the statistics collected in June of each year, there has been notwithstanding a decided increase in the number of pigs now kept in the country, the total increase for Great Britain of 400,394 swine, being divided as follows: England, 348,431; Wales, 30,948; and Scotland, 21,015, a total increase in England and Wales of 18 per cent., and in Scotland of 15·9 per cent. In sows kept for breeding purposes the increase in England and Wales was 59,529, or 21·2 per cent., and in Scotland 4,696, or 31·8 per cent.

The modifications in the general procedure adopted with regard to swine fever during the latter portion of the year are explained in the opening section of this Report in connection with the arrangements made on the outbreak of war. The reasons for this action still continue.

Artificial immunization against Swine Fever.

On January 26, 1914, the Swine Fever Committee issued their Second Interim Report [Cd. 7247], which deals solely with the question of the artificial methods of immunization of swine against swine fever in the light of the information gained

through the inquiries made by officers of the Board on the Continent, to which reference was made in the Report for 1913, and puts on record the opinions that:—

(*a*) Inoculation with serum alone affords too brief immunity to be of practical value.

(*b*) Every known method of vaccination, or simultaneous inoculation with serum and virus, exposes the inoculated animal to risk and renders it infective to others.

(*c*) Existing methods of inoculation do not promise assistance in the eradication of swine fever, though they might be serviceably employed in connection with a policy of control.

(*d*) Further experiment is necessary with a view to finding a form of vaccination which will give active immunity to the inoculated animal, without risk of further loss and dissemination of the disease.

The Committee further considered that the experiments which were being initiated by the Board on the recommendation of the Committee should be continued.

That course has been followed, and it will shortly be possible to furnish the Committee not only with a full report of the experiments in question, but also with the results of certain operations undertaken by the Board in the later months of the year in a district round Colchester, where treatment of the swine involved in outbreaks with anti-swine-fever serum was undertaken by the Board in all cases in which the premises were suitable for the purpose whenever the owner agreed to the adoption of the treatment. The district in question was one of those in which the more virulent form of the disease had been present, occasioning severe losses to the owners concerned, and the procedure was adopted as affording them a means of lessening such losses.

With this information before them it is to be expected that the Committee will be in a position before very long to make their final report to the Board on the cause of the continued prevalence of swine fever in Great Britain and the practicability of the adoption of any measures with a view to securing its speedy extirpation, and with the recommendations of the Committee before them the Board will be enabled to come to some definite decision as to their future procedure in that connection. In the meantime, the only practicable course seems to be to continue to deal with outbreaks as they arise in accordance with the procedure established on the outbreak of the War.

Sheep-scab and the Compulsory Dipping of Sheep.

The steady diminution in the prevalence of sheep-scab in Great Britain, which was recorded in the Report for last year, gave rise to representations from various agricultural societies—including the Council of the National Sheep Breeders' Association and the Royal Agricultural Society of England—to the effect that more stringent means should be taken towards the total eradication of this disease, and that such measures should include regulations of a stricter character dealing with districts and individual farms

where the disease is known to exist, and also precautions against the introduction of the disease by means of sheep brought to this country from Ireland.

This aspect of the question had by no means been lost sight of, and an indication had already been given that some special steps were likely to be taken in respect of Irish sheep. Orders relating to the double dipping of sheep on individual farm premises had, from time to time, been issued by the Board, and such dipping had also been prescribed in specified areas in which the disease was prevalent.

After full consideration it was decided that it would be advantageous to put the latter requirements into a general Order—the Sheep (Double Dipping) Order of 1914—which could be made to apply to any defined area by a separate Order of the Board, and, further, that an Order—the Sheep-Scab Order of 1914—should be made authorizing the application of its special provisions to individual premises by a notice served upon the occupier, either by an inspector or other officer of the Board, or by an inspector of the local authority of the district, intended to meet the case of any premises as regards which the Board or the local authority have reason to suspect that sheep-scab exists undetected, or that a risk of infection has been incurred.

Outbreaks in 1914.

The returns as regards sheep-scab in Great Britain during the year 1914 are less unfavourable than might at first sight be inferred from the fact that the total of 226 outbreaks is but nine fewer than the total for 1913.

It will be noted that in respect of this disease the year 1914 started badly, the return for the March quarter showing an excess of 29 outbreaks over the figure for the corresponding quarter of 1913. In each succeeding quarter the figures for 1914 were favourable, the decrease for the three quarters being 38 outbreaks, leaving a balance of 9 outbreaks in favour of 1914. The return for the December quarter is particularly favourable, showing a decrease in Great Britain of 30 outbreaks, the improvement in Wales being specially marked, 5 outbreaks only being recorded in four counties, as against 36 outbreaks in nine counties in 1913. That counties like Cardigan, Glamorgan, Merioneth, and Montgomery should have a clean record for the first winter quarter is noteworthy.

Suspension of Compulsory Dipping Orders.

As has been indicated in the opening section of this Report, the suspension of the operation of the General Orders requiring the compulsory dipping of sheep was one of the measures taken on the outbreak of war with a view of lightening the duties of officers of local authorities in connection with the Diseases of Animals Acts. Some apprehension has been expressed that this action was calculated to prejudice the favourable result of the

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Board's operations against sheep-scab. There is nothing, however, in the above figures to show that the action taken has had any such detrimental effect, and there is reason to believe that, as a matter of fact, the dipping of sheep in the autumn was very generally carried out by flockmasters notwithstanding the suspension of the Compulsory Order. It is recognized, however, that any prolonged suspension of the general dipping requirements is undesirable, and it is intended that they shall be reimposed in a somewhat modified form at an early date.

Anthrax.

For the first time since the new Anthrax Order of 1910 has been in operation the returns as to the confirmed outbreaks of anthrax show an increase, the number of outbreaks recorded in 1914 being 722 as against 594 in 1913. As has been explained in previous reports, the Order of 1910 brought into operation, as from January 1, 1911, a procedure whereby no suspected case of anthrax is included in the returns until the veterinary officers of the Board have confirmed the existence of the disease. It is of interest, however, to note that this increase of 128 outbreaks in the comparative figures was practically confined to the first half of the year, the return for the second half of 1914 being only four in excess of that for the second half of 1913.

The figures for 1914 still, however, compare favourably with those for 1912 when 743 outbreaks were confirmed, and in view of the fact pointed out in the preceding paragraph there seems no reason to suppose that the disease is gaining any permanent headway.

During 1914 anthrax existed in seventy-four counties in Great Britain, as against sixty-seven counties in 1913. In England, the 415 outbreaks recorded occurred in forty-six counties; in Wales, 5 outbreaks in three counties; and in Scotland, 302 outbreaks in twenty-five counties.

In Wiltshire the outbreaks in 1914 exceeded in number those returned in the previous year by 19; in Lancashire by 18; and in Cornwall by 14; and, as regards Scottish counties, in Aberdeenshire the excess was 33 outbreaks, and in Lanarkshire 12 outbreaks. In other counties the variations in the figures for the two years were slight, except in the case of Fife, where the total was 12 fewer in 1914.

The fact that in the case of anthrax infection may be imported in various manners, and especially in feeding stuffs for animals, makes it difficult to assign to any one particular cause the increase from time to time in the number of outbreaks recorded. Moreover, in certain parts of the country possible sources of infection exist in connection with trades using imported hides of animals as their raw material. Should it occur in any particular year that an excessive amount of infective material is imported, some increase in the disease in this country may be expected to follow. The information available does not enable any definite conclusions to be come to on these points, but steps have now been taken

to obtain from local authorities fuller information as regards each outbreak, and with such particulars as have now been called for it may be possible in future to draw more precise inferences on these points.

Glanders.

During 1914 there has been a steady decline in the prevalence of glanders, the outbreaks being fewer as compared with the corresponding quarters of 1913 by 20 in the March quarter, 15 in the June quarter, 5 in the September quarter, and 25 in the December quarter, showing a total reduction of 65 outbreaks (97 against 162) as between 1913 and the year under review.

In Wales no outbreak was recorded, as against 1 outbreak in 1913.

In Scotland 4 outbreaks occurred in three counties, the figures and the number of counties being identical in each year.

In England 93 outbreaks occurred in sixteen counties involving 276 horses, as against 157 outbreaks in fourteen counties involving 430 horses. The outbreaks were, therefore, 64 fewer, and 154 fewer horses were attacked, although the number of counties making returns was greater by two.

The want of progress in the operations against this disease which had to be recorded last year no longer obtains, and the outbreaks of glanders in Great Britain have been reduced to less than 100 for the first time since 1874, the year in which the records commence. As lately as the year 1906 the outbreaks exceeded 1,000, whilst in 1909 they still exceeded 500. In the two following years the totals reached 351 and 209 outbreaks respectively, whilst in 1912 they fell to 172.

This record cannot be considered as otherwise than satisfactory from the point of view of the complete eradication of the disease, and in this connection the improvement in the position in and around the metropolis is a matter for special satisfaction.

As regards the indications referred to in the Report for 1913 that glanders was being imported into this country by Russian ponies, representations on the subject were made in due course to the Russian Government, but both the preliminary negotiations and the trade in these ponies were brought to a standstill by the outbreak of war, and there is no immediate prospect of their being renewed.

Parasitic Mange.

The returns for the year 1914 show that 1,530 outbreaks of parasitic mange were reported from sixty-nine counties in Great Britain, 2,642 horses being attacked by the disease. The suspension of the Parasitic Mange Order as from August 6 makes these figures valueless for the purpose of comparison with the returns for previous years.

It may be useful, however, to put on record such a comparison in respect of the first half of 1914 and that of the corresponding half of the previous year—the more so that it is in the first half of the year that the disease is most prevalent.

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In respect of that period there was in 1914 a satisfactory decrease of 279 outbreaks in Great Britain, the horses returned as attacked by the disease being 926 fewer than in 1913. In England the decrease in the number of outbreaks was 263, and of horses attacked 836; in Wales the outbreaks were 41 fewer, and the horses attacked 136. In Scotland, on the other hand, there was an increase of 25 outbreaks, and 46 more horses were attacked by the disease than in the previous year.

As in 1913, the disease continued most prevalent in London, 258 outbreaks; Lancashire, 243 outbreaks; and in the West Riding of Yorkshire, 118 outbreaks. In each of these districts, however, the figures show some improvement on those for the first half of 1913. Kent and Warwickshire, in England, and Glamorgan, in Wales, are also counties in which the number of outbreaks has shown an appreciable decrease. At the same time, there is hardly a county in which any substantial increase in the prevalence of the disease is shown.

In these circumstances it is a matter for regret that any interruption in the beneficial work which is being done under the Order should have become necessary, and it is the intention of the Board to bring the Order again into operation so soon as they are satisfied that such action on their part will not throw any undue strain on the officers of local authorities, especially in those parts of the country in which the military operations have largely increased the duties of the police.

Regulations as to Dogs.

During the past year the restrictions in respect of dogs imported into Great Britain from abroad were modified so as to require detention and isolation on veterinary premises for a period of four calendar months from the date of landing of the dog in this country. The period of quarantine required by the Order of 1901 was six months, but it had been the practice to release from detention by special order before the expiration of the full quarantine period—but with a minimum of three months' detention—dogs in respect of which certain declarations could be furnished by the owner as to the conditions under which they had been kept whilst abroad, and other modifications in the application of the restrictions had been made from time to time to meet special cases.

In issuing the Importation of Dogs Order of 1914 the Board at the same time decided that the various concessions referred to above which had hitherto been made should no longer be allowed, and that the four months' detention and isolation should, as a general rule, be enforced in respect of all dogs landed in this country on and after November 1, 1914.

The number of dogs which had been imported into Great Britain during the year 1914 exceeded by over 50 per cent. the number so imported during 1913, which number was itself the highest which had been recorded for any year up to that time. In 1914 the number of dogs landed reached the unprecedented

total of 1,250, of which 595 were landed during the first seven months of the year and the remainder in the last five months. The latter period may be said to cover roughly that from the declaration of war to the end of the year. It will thus be observed that the increase was not confined to the latter part of the year, and the pressure on this work was fairly consistent throughout the whole of the year. Of these 1,250 dogs, 909, or 72·75 per cent., were detained on veterinary premises which have been generally approved for the reception of all classes of dogs. The number of imported dogs released from quarantine during the year was 697, and the largest number under detention at any one time was 462, as compared with 308 in the previous year. Sixty-five dogs were landed for export abroad.

Among the causes which contributed to the extraordinary increase in the number of dogs imported may be cited the large influx of refugees from the Continent, the arrival of the Canadian Expeditionary Force in this country with many dogs as regimental pets, and the return of soldiers to this country from abroad in connection with the War.

The number of troupes of performing dogs which were landed during the year naturally shows a large decline, the number falling from 62 troupes in 1913 to 26 in the year under notice.

A similar fall occurred in the number of other canine animals landed under the terms of the relative Order of the Board. In 1913 30 such animals were imported, but in 1914 the number was 12 only, namely, 10 foxes and 2 wild dogs. All these animals were consigned to zoological gardens for detention.

Exportation and Shipment of Horses.

The Exportation of Horses Act, 1914, amends the Diseases of Animals Act, 1910, in respect of the exportation of horses by enacting that the prohibitory clause of the latter Act respecting the shipment of unfit horses shall be extended to include any horse unless certified by a veterinary inspector to be capable of being worked without suffering. It further empowers a veterinary inspector to cause to be slaughtered, whether the owner consents or not, any horse examined under the principal Act, and found by him to be in such a physical condition that it is cruel to keep it alive, or to be permanently incapable of being worked without suffering. The new Act took effect on October 1, 1914.

The Royal Proclamation of August 3, 1914, relating, *inter alia*, to the prohibition of the exportation of animals suitable for use in war had, however, the effect of bringing the trade in horses, including that in worn-out horses, to an end, and all arrangements for the veterinary inspection of horses at the port of embarkation were cancelled. This position continued until the end of the year, and the Act has not yet come into effective operation.

As regards the trade to Holland, the figures as to the number of horses exported to Amsterdam for slaughter during the seven months in which this trade was able to be carried on show a

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slight increase over the total number exported to that port for slaughter in 1913, the figures being 2,552, as against 2,494.

Out of a staff of fifty-eight non-professional inspectors, as many as seventeen were engaged on military duties during the latter part of the year under review, and it may not be unfitting to put on record that two of these officers have already been killed in action. It has not been possible to provide for the duties of these inspectors by resort to temporary appointments, so that the burden which has fallen on the residue of the staff has been a heavy one, and at times it has been difficult to make adequate provision for the prompt performance of the more urgent duties arising from day to day.

Correspondence.

THE ARMY VETERINARY CORPS' COMFORTS FUND.

To the Editor of THE VETERINARY JOURNAL.

DEAR SIR,—On behalf of the officers, N.C.O's., and men of the Army Veterinary Corps serving with the Expeditionary Force in France, I desire to thank all members of the veterinary profession and their friends who have so generously contributed by subscription and in kind to the Army Veterinary Comforts Fund, and in other ways have so kindly assisted in adding to the comfort and well-being of the men of the Army Veterinary Corps during the very trying winter through which they have passed.

It is needless for me to say how much the gifts have been appreciated. The gratitude of all ranks cannot be sufficiently expressed, but the kindness of the many contributors will certainly be remembered for all time.

I am particularly asked to express their pride in the fact that it is the profession to which their corps belongs that has so greatly contributed to their comfort and enjoyment.

I trust you will kindly convey, through the medium of your paper, this message of thanks and appreciation to all.

I am, yours very truly,

J. MOORE,

Director of Veterinary Service,

Expeditionary Force.

VICTORIA VETERINARY BENEVOLENT FUND.

THE quarterly meeting of the above Fund was held at 10, Red Lion Square, London, on Thursday, April 8, 1915, at 5 o'clock.

There were present: S. H. Slocock, in the chair; Sir Stewart Stockman; Messrs. Banham, W. Freeman Barrett, G. H. Wooldridge, William Shipley (Hon. Secretary), and others.

The minutes of the previous meeting having been taken as read, the Secretary presented his quarterly report, as follows:—

SECRETARY'S QUARTERLY REPORT.

In presenting my quarterly report I must first of all refer to our financial position.

Thanks again to the help of our old subscribers, I feel we are in such a condition that we can meet any immediate claims on our Fund. We are not, however, in the position to increase any of our present grants. I feel that owing to the loss of members due to military exigencies we shall be fortunate to keep up our old grants. We are slowly but surely getting others to become members and step into the breach. There is, as everyone knows, a wave of charity over the country, a few eddies of which ripple over the veterinary profession. I am able to add a list of new members, and to show that several of our members have increased their annual subscriptions; but in some cases memberships have lapsed (some through death, some through absence on military duties), and in a few cases helpful subscriptions have had to be reduced. I still hope that with those members of the profession who are increasing their subscriptions in other directions the needs of the Fund will not be overlooked.

I would like to note the fact that we are getting subscriptions and donations from ladies. This is especially interesting to me, as it indicates that the ladies of the profession are becoming interested in our work, and are obtaining some knowledge of the existence of the Fund. This is, I think, desirable.

I must ask the members of Council, if I am not able to give as much time to the work as previously, to understand that I have not the adequate time at my disposal, and would like to ask if some remuneration could be given for clerical services. The correspondence simply overwhelms me, and were it not for the services of a shorthand clerk it would be impossible for me to continue in my dual office of Secretary and Treasurer.

I recommend that all the old grants be continued until the time arrives when we can increase them. I am glad to report I have no fresh applications.

I have been able to get the nomination of Lawrence B. Farr accepted by the London Orphan School. The soliciting cards have been printed. I shall be happy to send a list of subscribers to the London Orphan School, and also a supply of cards, to any member of the profession who will endeavour to secure the election of this boy, of whom I get most encouraging reports from the medical attendant and the master of the school he now attends.

I submit a report from Mr. J. B. Wolstenholme, of the grants made by the National Veterinary Benevolent and Defence Society, by which you will see there is no overlapping, but co-operation in the grants given in at least two cases.

LIST OF NEW SUBSCRIBERS SINCE LAST QUARTERLY MEETING, JANUARY 7, 1915.

	£	s.	d.
Bushman, G. A., Islington	2	2	0
Baird, J., Dumfries	1	1	0
Buckingham, H., Norwich	0	10	6
Border Counties Veterinary Medical Society, Edinburgh ...	5	5	0

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	£	s.	d.
Frood, J. Lamb., Board of Agriculture	1	1	0
Bornby, H. S., Rhodesia	2	2	0
Hoare, E. Wallis, Cork, Ireland	1	1	0
Hunting, C. S., Loughborough	1	1	0
Jones, H. L., Portuguese East Africa	1	1	0
Leach, E. H., Newmarket	2	2	0
Lawson, E. J., London	0	10	0
Marshall, A., Dartmouth	0	10	6
McKerlie, J., Hungerford	2	0	0
Moore, R. C., Leicester	0	10	6
Moody, J. F. B., City of London Yeomanry	0	10	6
Murray, R., Rugeley	0	10	6
Newsom, G. E., Wicklow, Ireland	1	1	0
Nisbet, J. B., Fence House, Durham	5	0	0
O'Dea, A. F., Belclare, Tuam, Galway	0	10	0
Pollard, H., Wakefield	0	10	6
Paton, H., Stevenage	1	0	0
Thomas, Lieutenant W. H., Army Veterinary Corps	0	10	6

LIST OF DONATIONS RECEIVED SINCE LAST QUARTERLY MEETING, JANUARY 7, 1915.

	£	s.	d.
Bowes, Mrs., Leeds	0	10	6
Berry, Holman, Board of Agriculture	0	10	6
Berry, Holman, Board of Agriculture (special)	1	1	0
Bazley, F., Devizes	1	1	0
Dollar, J. A. W., London, W.	5	5	0
Gofton, A., Edinburgh	0	10	6
Price, T. Salusbury, London	5	0	0
Smart, W. W., Board of Agriculture	1	0	0
Stuart, Mrs., Hove, Brighton	0	10	0
West, E. Alfred, "Cinema" Fund	5	6	6
Wilkinson, G. C., Newcastle	2	2	0
Stephenson, Clement	21	0	0
Heatley, Mrs. T. G., Woodbridge	2	0	0
In Memoriam, J. S. and A. R. S.	2	2	0

It was proposed by Mr. Wooldridge, and seconded by Mr. Banham, that the Secretary be empowered to pay for clerical assistance at the rate of 2s. 6d. per week. This was unanimously adopted.

It was proposed by Mr. Barrett, and seconded by Mr. Banham, that a subscription of one guinea for the year be paid to the Charity Organization Society, with the view of co-operation.

The President presented a cheque, value £10 10s., from the Eastern Counties Veterinary Medical Society, and a donation of £1 from Mr. W. Anderson.

The Secretary was instructed to write a special vote of thanks for the kind donations.

The usual vote of thanks concluded the meeting.

NOTE.—All communications should be addressed to 8, Henrietta Street, Covent Garden, London, W.C. Telephone, 4646 Gerrard. Telegrams, "Baillière, London."

Letters for the JOURNAL, literary contributions, reports, notices, books for review, exchanges, new instruments or materials, and all matter for publication (except advertisements) should be addressed to the Editors.

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Illustrations for reproduction should be in good black or dark brown on white paper or card.

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